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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,451	01/03/2002	Masaya Okita	Soyu C4B	8378
7590 Flynn, Thiel, Boutell & Tanis, P.C. 2026 Rambling Road Kalamazoo, MI 49008-1699		04/03/2007	EXAMINER KUMAR, SRILAKSHMI K	
			ART UNIT 2629	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/03/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/038,451	OKITA, MASAYA	
	Examiner	Art Unit	
	Srilakshmi K. Kumar	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 03 January 2007.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 30-35 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 30-35 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application
 6) Other: _____.

DETAILED ACTION

The following office action is in response to the amendment filed on January 3, 2007. Claims 30-35 are pending. Claims 30 and 35 have been amended. Claim 36 has been cancelled.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claim 30-33 and 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (U.S. Patent No. 4,795,239) in view of Shimada et al. (U.S. Patent No. 5,719,590).

With reference to **claim 30**, Yamashita et al. teaches a method of displaying images on a liquid crystal display device (11) configured to display images by applying image-responsive voltages (S1'-Sm') corresponding to image data (COM') to a matrix-type nematic liquid crystal panel while applying selection pulses (G1'-G2'), comprising: applying a voltage corresponding to image data (S1'-Sm') to each dot's (or pixel's) liquid crystal of the nematic liquid crystal panel while applying a first selection pulse (G1), and applying a constant voltage (VITO) independent from the image data to the liquid crystal of each dot (pixel) of the nematic liquid crystal panel while applying a second selection pulse (G2) (see Figure 2). With reference to **claim 35**, Yamashita et al. teaches a method of displaying images corresponding to image data (COM') on a liquid crystal display device (11) including a matrix-type nematic liquid crystal panel (see Figure 1), comprising the steps of: applying a voltage corresponding to image data

(S1'-Sm') to each dot's liquid crystal of the nematic liquid crystal panel during a first time zone (first portion of the horizontal scanning period, including the ending of the previous period) of a first frame period; applying a first selection pulse (G1') during a portion of the first time zone of the first period during the application of the voltage corresponding to image data; applying a constant voltage (VITO) independent from the image data to the liquid crystal of each dot of the nematic liquid crystal panel during a second time zone (ending portion of the horizontal scanning period, extending into the next period) of the first period, the second time zone beginning after the first time zone, the sum of the first and second time zones comprises the entire first period; applying a second selection pulse (G2') during a portion of the second time zone of the first period during the application of the constant voltage (VITO) independent from the image data; and repeating the above steps during each subsequent period (see Figure 2).

While teaching all that is explained above, and Yamashita et al. teaches horizontal scanning intervals, there fails to be any description of the voltages being applied within a frame period.

Shimada et al. teaches the application of a voltage corresponding to the image data to the liquid crystal panel while applying a first selection pulse in each frame period, and applying a constant voltage independent from the image data to the liquid crystal panel while applying a second selection pulse (Rn) in each frame period (see column 5, line 26-45 and column 6, lines 17-67; Figure 2).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the usage of frame periods similar to that which is taught by Shimada et al. when driving the display device similar to that which is taught by Yamashita et al. in order to

thereby provide a driving method for a display apparatus having smaller time periods for the driving to take place thereby allowing timing and display quality to be improved.

With reference to **claim 31**, Yamashita et al. teaches that the matrix liquid crystal panel is a TFT liquid crystal panel (see Figure 1, column 2, lines 36-51).

With reference to **claims 32 and 33**, Yamashita et al. fails to teach that the voltage applied for erasing or displaying black, as being applied at intervals where the voltage corresponding to the image data is applied, this voltage will display black to the segment electrode being that it is a non-displaying voltage.

Shimada et al. teaches that the constant voltage erases the image displayed on the nematic liquid crystal panel in an immediately preceding time zone of each frame period after application of the image-responsive voltage (from previous frame) (see column 13, lines 66-column 14, line 21), thereby displaying black.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow for the usage of a constant voltage that erases similar to that which is taught by Shimada et al. to be used in a device similar to that which is taught by Yamashita et al. in order to thereby provide a more uniform image with improved contrast.

3. **Claim 34** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. in view of Shimada et al. as applied to claims 30-33 and 35 above, and further in view of Miyawaki (U.S. Patent No. 5,777,594)

With reference to **claim 34**, the combination of Yamashita and Shimada et al. teaches all that is required as explained above, however fails to specifically teach that the liquid crystal

display device comprises a combination of nematic liquid crystal and backlight elements of three colors including red, green, and blue.

Moreover, Miyawaki teaches a liquid crystal display apparatus comprising a combination of a nematic liquid crystal (7) and backlight (19) elements of three colors including Red, Green, and Blue (see column 2, lines 55-62).

Therefore it would have been obvious to one having ordinary skill in the art to allow the usage of a backlight device including RGB light sources as described in the liquid crystal display device as taught by Miyawaki, in a device similar to that which is taught by Yamashita and Shimada et al. in order to thereby provide a color image to the user viewing the display device.

Response to Arguments

4. Applicant's arguments filed January 3, 2007 have been fully considered but they are not persuasive.

Applicant argues where the reference of Yamashita does not apply a first and second voltage to a single dot in each frame period, examiner, respectfully, disagrees. Yamashita teaches where a first voltage corresponding to image data ($S1'$ - Sm') is applied along with a selection pulse (G1), then a second, constant voltage of (VITO) is applied along with a second selection pulse of (G2). Thus teaching the limitation of first and second voltages.

Applicant argues where the secondary reference of Shimada does not teach a first and second selection pulse. The prior art of Shimada teaches a first and second selection pulses as shown in the Figures 2a-g and col. 5, lines 20-45 and col. 6, lines 17-67, and thus has only been combined with the main reference of Yamashita to teach frame periods. Therefore, the

combination of Yamashita and Shimada teach the limitations of first and second selection pulses in a frame period.

With respect to applicant's arguments on where the prior art fails to teach a constant voltage erases an image of the LCD, Examiner, respectfully, disagrees. The prior art of Shimada teaches a constant reset voltage in column 13, line 66-column 14, line 21, which erases the image. Therefore the combination of Yamashita and Shimada teach the limitations set forth in the instant application. Thus the rejection is maintained and made FINAL.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 571 272 7769. The examiner can normally be reached on 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571 272 3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Srilakshmi K. Kumar
Examiner
Art Unit 2629

SKK
March 29, 2007



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